Inside Wallops

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NASA and NOAA Fly Unmanned Aircraft Into Hurricane Noel

NASA and the National Oceanic Atmospheric Administration (NOAA) opened a new chapter in the world of hurricane observation by making the first unmanned flight into Hurricane Noel.

An unmanned aerial system, or UAS, flew into the eye wall of the hurricane at altitudes as low as 300 feet.

Using the small, remotely piloted aircraft, scientists were able to make detailed observations of areas of hurricanes that are too dangerous for manned aircraft closing an important gap in obtaining real-time near-surface meteorological and oceanographic data.

"NASA is pleased to partner with NOAA in achieving this long-time goal of boundary layer observations into an active hurricane." said Randy Albertson, deputy manager of the Suborbital Science Program for the Science Mission Directorate at NASA Headquarters, Washington. "The Aerosonde Hurricane Boundary Layer Mission, combined with data from recent NASA and NOAA field missions using conventional aircraft and satellites, will provide a valuable new set of observations for air-sea interaction and tropical cyclone research."

The UAS was launched from NASA's Wallops Flight Facility at 2:08 p.m.(EDT), on Friday, November 2.

Detailed observations of the near-surface hurricane environment have been elusive because of the severe safety risks associated with low level manned flight missions.

The unmanned aerial system flew in winds reaching 80 mph in the core of the storm for approximately 7.5 hours providing real-time detailed observations of the near surface, high wind environment to NOAA forecasters at the National Hurricane Center, Miami.

"This historic Aerosonde mission into Hurricane Noel is the first time we are able to successfully fly an unmanned aircraft into the inner core of a hurricane. Unmanned flights at very low altitude are important since they give us unique insights and continuous observations in a region of the storm where the ocean's energy is directly transferred to the atmosphere just above," said Joe Cione, a hurricane researcher at NOAA's Atlantic Oceanographic and Meteorology Laboratory, Miami, and the lead scientist on this project.

NASA Photo

The Aerosonde unmanned aerial system (above) is owned and operated by AAI Corporation, Hunt Valley, Md. It operated within a 250 nautical mile radius from the departure point at the NASA Wallops Flight Facility into the region of Hurricane Noel where the atmosphere meets the sea. Coordination, command and control of the aircraft was done by AAI, based out of NASA Wallops.

The environment where the atmosphere meets the sea is critically important in hurricanes as it is where the ocean's warm water energy is directly transferred to the atmosphere just above it. The hurricane/ocean interface also is important because it is where the strongest winds in a hurricane are found. Observing and ultimately better understanding this region is crucial to improving forecasts of hurricane intensity and structure. Enhancing this predictive capability would not only save the U.S. economy billions of dollars, but more importantly, it could save many lives.

In September 2005, the 5-foot-long Aerosonde with a 10-foot wing span, was flown from NASA Wallops Flight Facility into Tropical Storm Ophelia on a 10-hour mission sending back data from readings that were taken and relayed every half-second as the storm moved off North Carolina's Outer Banks and past the Virginia coast.

Celebrate Wallops Day November 6

8:15 – 9:45 – Bldg. E-109 Open House

8 to 10 a.m. – Building N-159 Hangar
Wallops Fire Department new equipment on display
Hydrospheric and Biospheric Sciences Laboratories open
OASIS on display

10 to 11:30 a.m. Building E-100 Auditorium
Town Hall Meeting with Dr. Ed Weiler, Director of NASA Goddard Space Flight Center

11:30 a.m. to 1 p.m. — Pavilion
CFC Picnic and Chili Cook-off
Fun Run/Walk

1 to 2:30 p.m. – Building F-7
Balloon Program Facility

1 to 2:30 p.m. – Building F-10
Sounding Rocket Program/NSROC Facility

1 to 2:30 p.m. – Building H-100
Payload Processing Facility

Trick or Treat?

Names With-Held to Protect the Guilty

Rain Returns to Delmarva

by Ted Wilz, Senior Meteorologist

After three very dry months with well below average rainfall, we finally received some much-needed precipitation during October. The month started out much like the previous three, with only .09 inches of rain occurring through the 18th of the month. The end of the month was wet with nearly an inch of rain occurring on October 24 and the 25, bringing the monthly total to 3.33 inches. This is slightly above October's average of 2.97 inches.

October also was a very warm month, with temperatures averaging about eight degrees above normal. New record highs were set on four days during October, from the 7th through the 9th, and again on the 24th when the temperature reached 81 degrees. The summer-like 91 degree temperature recorded on the 9th was the warmest day ever recorded at Wallops during October!

The coolest day of the month was on the 30th when the morning low dipped to a chilly 36 degrees. No record lows were set during a balmy October.

As winter approaches, December promises to bring chillier temperatures to the region. Average high temperatures in early December are usually in the low 50's, cooling to the mid to upper 40's by the end of the month. Lows usually start out in the mid 30's, but decrease to around 30 as January approaches. The all-time high temperature for the month occurred when a record 77 degree temperature brought the golfers out on Dec. 7, 1998. The coldest temperature ever recorded during December occurred when we reached a frigid 4 degrees on Dec. 21, 1989, bringing a Canadian chill to the area.

December averages 3.24 inches of precipitation, usually occurring on nine days during the month. It also brings the first significant chance for wintry weather. We average 1.4 inches of snow during the month.

With snow and freezing precipitation becoming more of a reality, now is the time to check for ice scrapers. Make sure your vehicle is road-worthy and ready for wintry weather.

Wallops Shorts.....

Launch

A NASA sounding rocket was launched from Wallops Island on October 30. The Terrier-Black Brant carried a 657 pound payload to investigate mid-latitude ionospheric irregularities associated with terrestrial weather systems. Preliminary results indicate all systems functioned nominally.

Dr. Gregory Earle from the University of Texas at Dallas was the experimenter. Dave Moltedo, NASA Range and Mission Management Office, was the project manager, and Bruce Scott, NASA Sounding Rocket Operations Contract, was the mission manager.

Craft and Shopping Extravaganza

November 7
11 a.m. to 1 p.m.
Building E-2
Training Room

Some of the items to be offered include: cross stitch pictures; jewelry; Christmas baskets, trees, wreaths, and ornaments; baked goods; purses; Swiss skin care products; Raggedy Ann & Andy dolls; floral arrangements; lanyards; handmade cards

Diversity Council Words to Live by

"Outstanding leaders go out of the way to boost the self-esteem of their personnel. If people believe in themselves, it's amazing what they can accomplish"

……. Sam Walton

NASA'S 50th Anniversary Web-Site

Over the next year, NASA will celebrate 50 years of scientific and technological excellence.

Visit the NASA history web-site at www.nasa.gov/50th for a calendar of events.

Inside Wallops is an official publication of Goddard Space Flight Center and is published by the Wallops Office of Public Affairs, Extension 1584, in the interest of Wallops employees. Recent and past issues of *Inside Wallops* also may be found at: http://www.nasa.gov/centers/wallops/news/newsletters.html

Editor Betty Flowers